

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution of South Africa

to the CSTD 2018-19 priority theme on 'The impact of rapid technological change on sustainable development'

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2018/19 UNCSTD Inter-Sessional Panel discussion topics

Priority Theme 1

“The impact of rapid technological change on sustainable development”

South African perspective...

Introduction

The National Development Plan (NDP) and the 2030 Agenda both recognize the critical role, cross-cutting nature and contribution of science, technology and innovation in eliminating poverty, reducing inequality and unemployment by 2030. The realization of both these development agendas is informed by the principles of inclusion, cooperation and collaborative partnerships, and they prioritise society (people’s well-being), inclusive economic growth (prosperity) and the planet (sustainable and resilient planet) in a manner that promotes partnerships in achieving inclusive development. The National Development Plan and the 2030 Agenda (sustainable development) both recognize the critical role of science, technology and innovation in achieving inclusive and sustainable development.

The role of science, technology and innovation in achieving the goals of the National Development Plan and sustainable development is based on investments in research, technology development, technology piloting and ensuring equitable access to the knowledge infrastructure. The investments are aligned to the call of National Development Plan’s for South Africa to “draw on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state and promoting leadership and partnerships throughout society”. These investments also reinforce the fact that no country can develop and achieve inclusive growth without sound investment in science, technology and innovation.

The implementation of science, technology and innovation activities prioritises gender inclusion through programmes such as the Women in Science and support youth e.g. the Youth Technology Innovation Fund and Grassroots Innovation Programmes. The current science, technology and innovation investment respond to the NDP and the SDGs.

Question 1: *From the perspective of your country/region what are the key emerging technologies and their current and potential applications that could give an opportunity to solve great societal challenges and achieve the SDGs in your country or region?*

A research agenda that develops knowledge to improve and increase our understanding of the domestic, regional, continental and global challenges in a manner that produces tangible and sustainable socioeconomic benefits. This agenda also contributes towards enhancing the goal of an innovative and capable state. The key interventions in this regard include more than 198 Research Chairs and 15 Centres of Excellence. South Africa has also made considerable investment in strategic research infrastructures such as the South African Radio Astronomy Observatory (SARAO); the South African Environmental Observation Network (SAEON) and the South African Institute for Aquatic Biodiversity (SAIAB).

Question 2: *Can you provide examples of policies/projects/initiatives that promote rapid technological change in your country/region and mitigate their potential negative effects? Are there any of these policies/projects/initiatives directed to women, youth or other groups of the society? How have the policies targeted inequalities? What are the challenges confronted in implementing these projects?*

Technology development in support of industrialization. The department continues to make crucial investments in a range of programmes that strengthen and leverage science, technology and innovation as a key enabler of economic development. This includes programmes to support small and medium enterprises, improve the competitiveness of existing industrial sectors, enhance localisation opportunities, and help to build the industries as a future. To illustrate, the investment on Technology Stations supports more than 3000 SMMEs through providing access to world-class infrastructure and expertise that would otherwise not be available to stakeholders to enable them to engage in technology innovation.

The investment in science, technology and innovation is enabling and strengthening select industry sectors e.g. the Biorefinery Industry Development Facility and various

Sector innovation funds that advance innovation in competitive sectors. In addition, investment is also made in the revitalization of strategic economic growth sector including mining (Mandela Mining Precinct).

Through investments in basic research as well as technology development, we have developed capabilities in all of the key technology areas that are crucial achieving the goals of the National Development plan and the sustainable development agenda. This includes data science and analytics, additive manufacturing, nanotechnology, biotechnology, robotics, cybersecurity, artificial intelligence, high-powered computing, and the internet of things. Through various funding instruments managed by the Technology Innovation Agency (TIA), a variety of innovators are provided with support to develop and commercialise promising technologies. This includes a special fund targeted at youth innovators. Full details of the various programmes are contained in the annual reports and websites of the DST and its various entities.

Question 3: *What are the actions that the international community, including the CSTD, can take to contribute to maximize the benefits and mitigate the risk associated to rapid technological change? Can you give any success stories in this regard from your country or region?*

Demonstrating, testing, and diffusion of technological solutions, particularly solutions to improve the quality of life. The current investment includes key programmes intended to achieve the following:

- *demonstrate innovative technology solutions for the delivery of basic services* e.g. water (Water Technologies Demonstration Programme); sanitation (South African Sanitation Technology Demonstration Programme); energy (renewable energy), health (Medical diagnostic devices; Pharmaceuticals (Indigenous knowledge and non-indigenous knowledge based; Strategic Health Innovation Programme (SHIP). These programmes have contributed towards providing access to decent basic services; demonstrated alternative service delivery solutions to lead departments and also highlighted the need for an enabling policy environment and capacity to advance the deployment of innovative technologies for the delivery of basic services. One of the successes of these

programmes includes influences in service delivery policy and enhancing its alignment and support for innovation.

- efforts to build and strengthen the capacity of the state to better deliver basic *services and address apartheid era challenges* such as spatial marginalization. These programmes include the provision of evidence-based decision-support tools such as the Risk and Vulnerability Atlas (key in disaster management); the spatial temporal evidence for South Africa (key tool in achieving spatial transformation); the Municipal Innovation Maturity Index (which assesses and measures innovation capacity and readiness to guide the deployment of technology solutions in service delivery) and the Rural Innovation Assessment Tool which is intended to map and strengthen rural local systems of innovation. This is key to support innovation in rural economies.

Question 4: *Could you suggest some contact persons of the nodal agency responsible for policies related to rapid technological change and its impact on sustainable development as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.*

Based on investment in research infrastructures, dedicated human capital development initiatives, South Africa is well placed to continue working with partners at a regional, continental and global levels to provide knowledge critical in decision-making for the sustainable development agenda; provide innovative technology solutions that respond to the sustainable development agenda and use its existing capacities to work with relevant partners in strengthening STI. To information exchange platforms in response to the sustainable developments have been supported namely the South African Sustainable Development Goals Knowledge Hub and the Innovation Bridge.

In an effort to attain an inclusive and responsive national system of innovation, the Department is mapping science, technology and innovation investments at the

different spheres of government. In this regard, this includes investment in incubation and maker spaces by provincial departments, eg. the Innovation Hub, eKasi Labs, etc. The department also recognizes the role of the private sector and non-profit organizations in supporting social innovations.

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